

McIntosh

MQ 104 CUSTOM ENVIRONMENTAL EQUALIZER



SERVICE INFORMATION

SERIAL NO. AM1001 TO AM1999

PERFORMANCE LIMITS & RATINGS

FREQUENCY RESPONSE

20Hz to 20,000Hz, $\pm 0.5\text{dB}$ (with equalization set flat)

HUM AND NOISE

Flat response, 90dB ($79\mu\text{V}$) below rated output (2.5 V)
Worst case setting, 85dB ($140\mu\text{V}$) below rated output (2.5 V)

HARMONIC DISTORTION

Does not exceed .1% at rated output level (2.5 V), 20Hz to 20KHz.

INTERMODULATION DISTORTION

Does not exceed .1% at rated output level (2.5 V), 20Hz to 20KHz.

EQUALIZATION

$\pm 12\text{dB}$ at one-third octave frequency centers, from 20Hz to 1kHz. Bandwidth selectable: Narrow (approx. 1/3 octave)
Wide (approx. 1 octave)

LOW FREQUENCY COMPENSATION

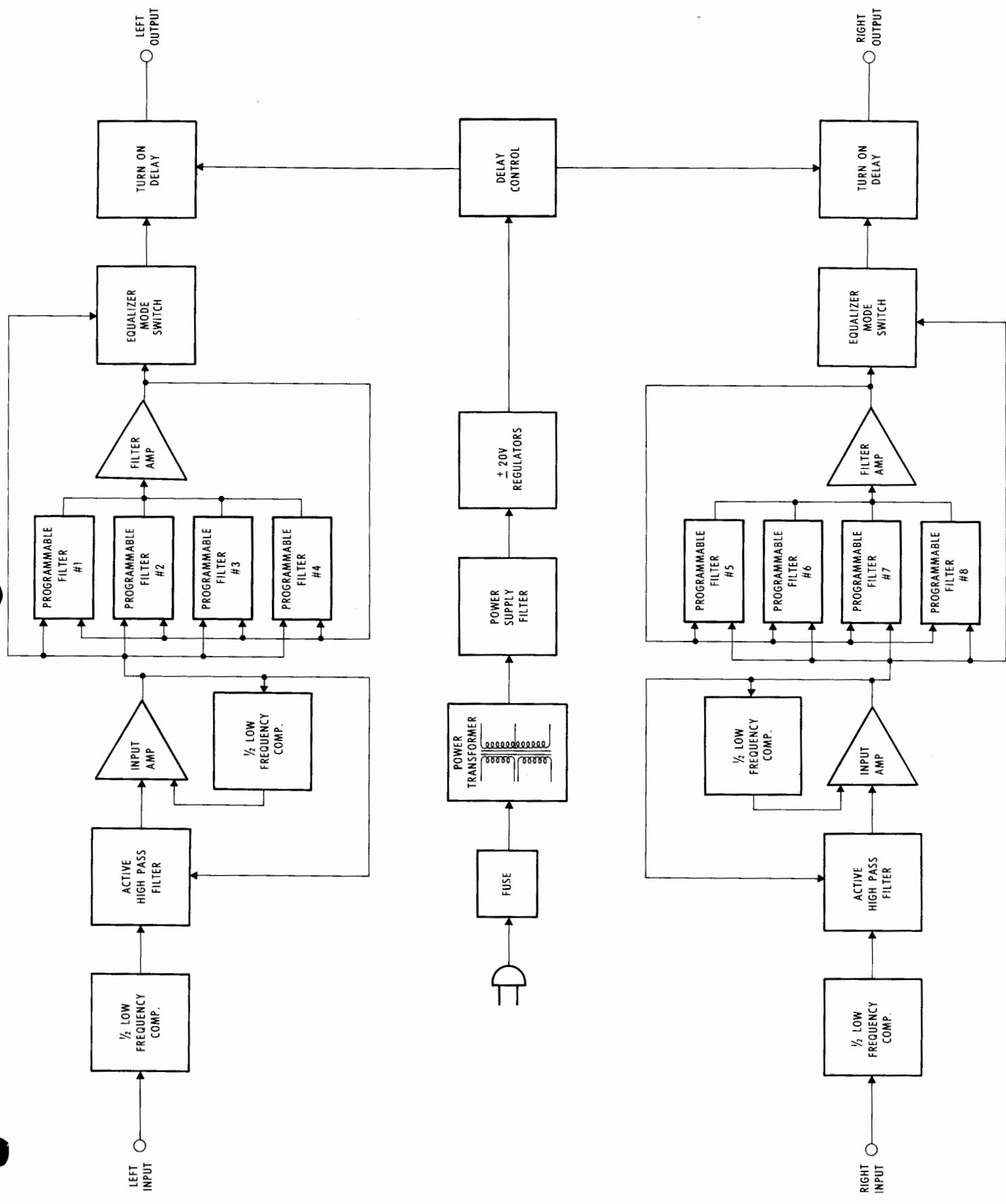
Five steps of low frequency compensation are included for McIntosh speakers, allowing 0 to + 17dB at 20Hz.

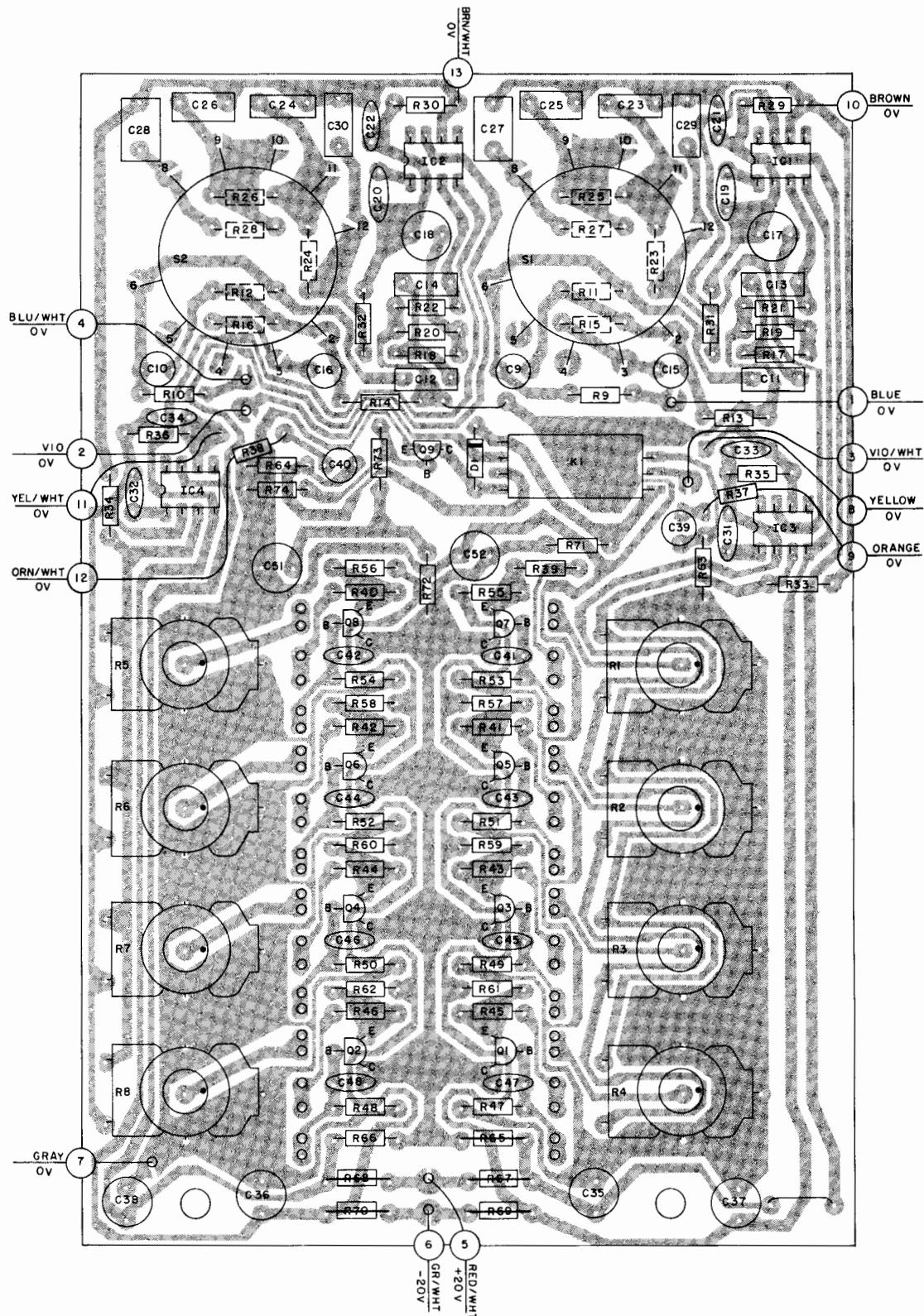
INPUT IMPEDANCE

$27\text{k}\Omega$

OUTPUT IMPEDANCE

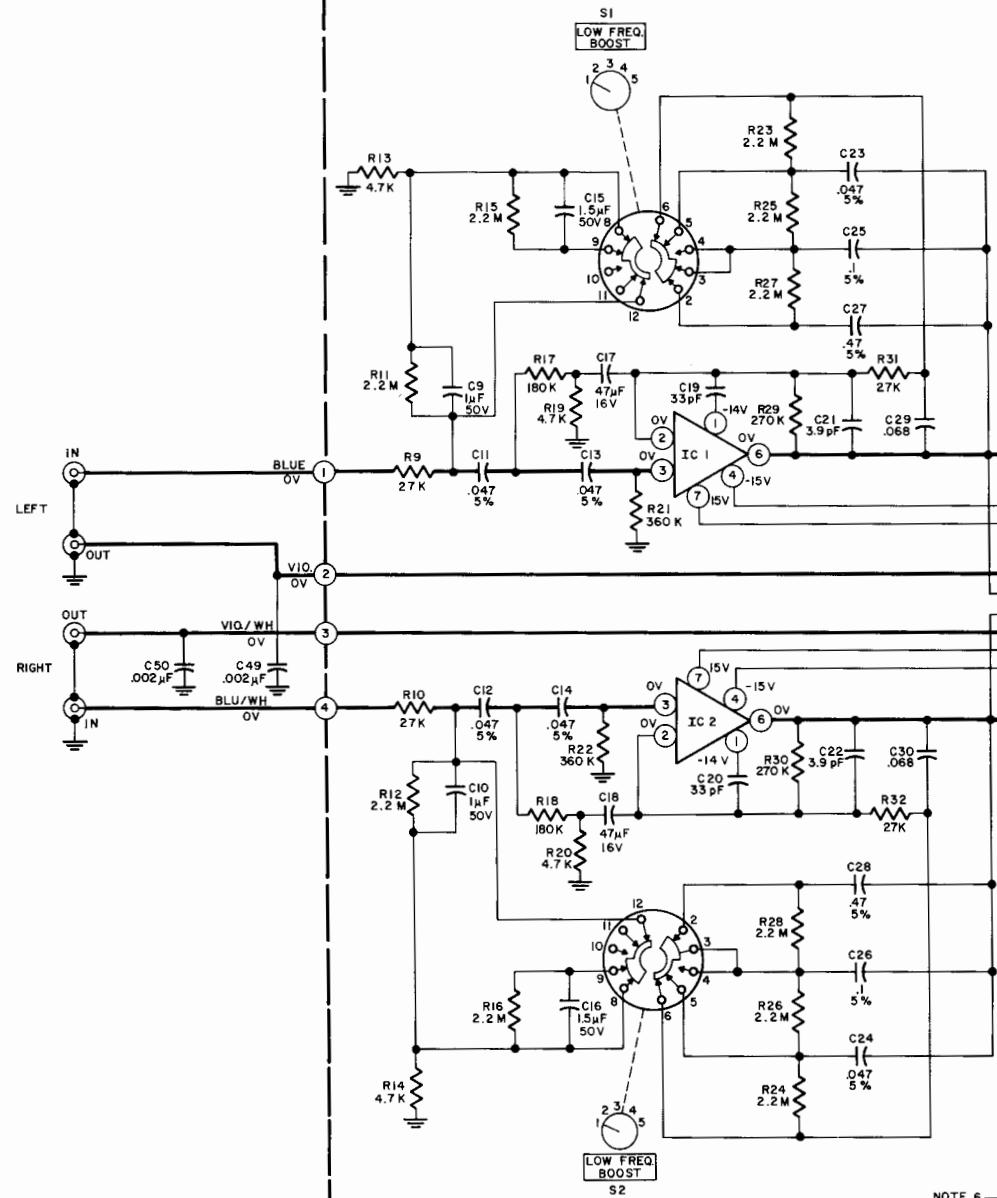
600Ω ; to operate into $10\text{k}\Omega$ load or greater



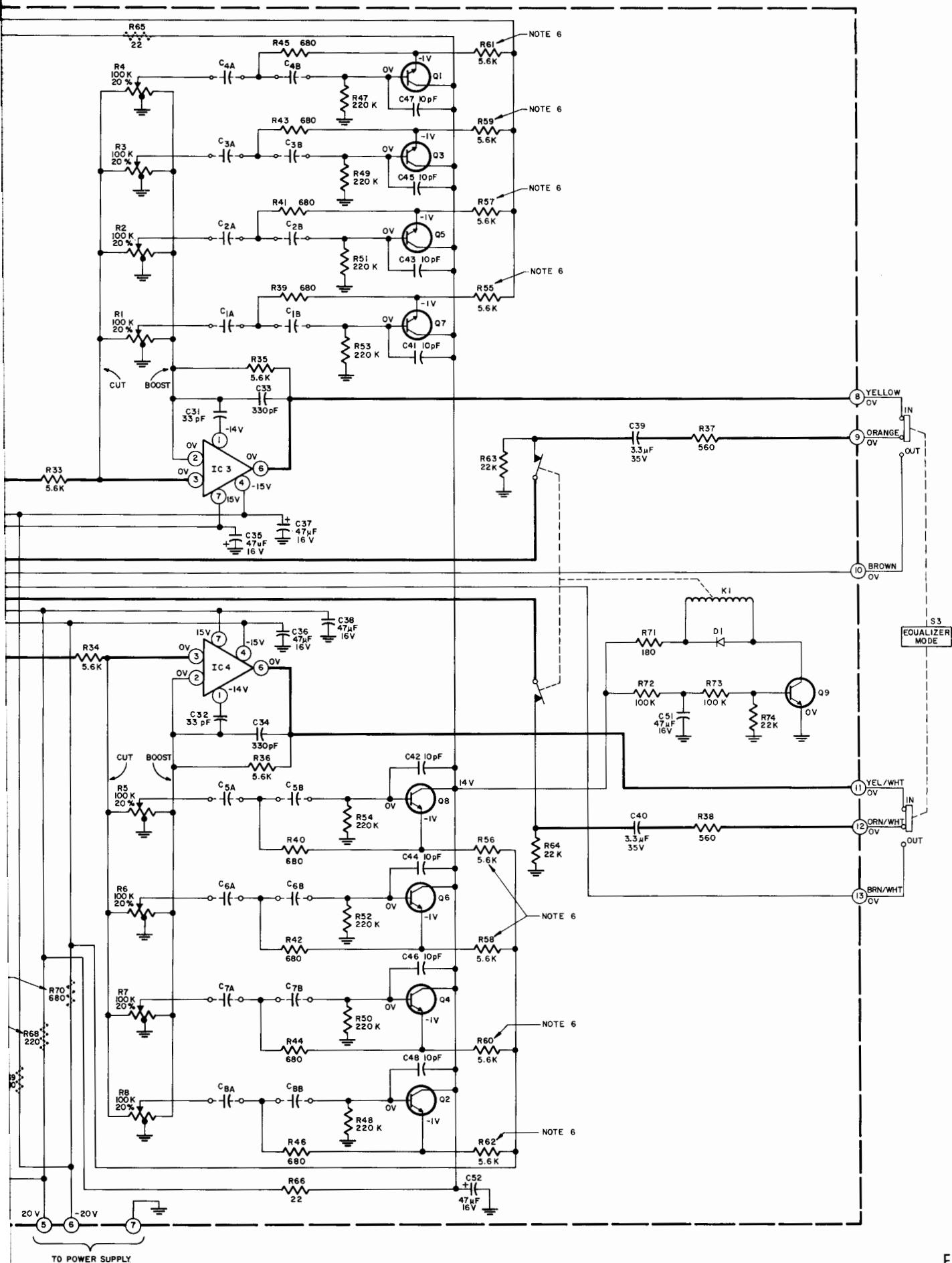


EQUALIZER PC BOARD
045-082

EQUALIZER PC BOARD 045-082

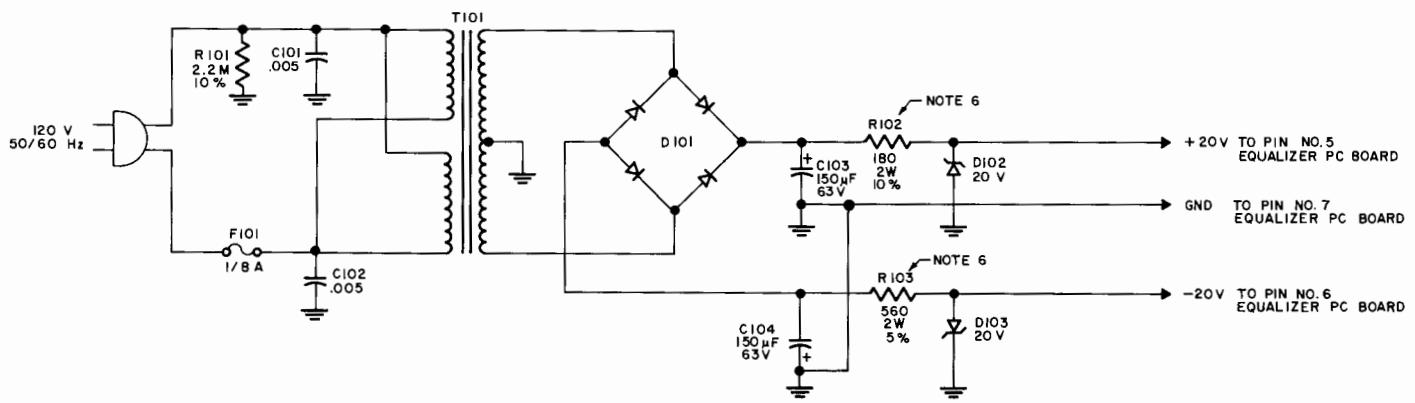


NOTE 6 — R70 680
NOTE 6 — R68 220
NOTE 6 — R69 680
NOTE 6 — R67 220
20V 5



TO POWER SUPPLY

EQUALIZER



POWER SUPPLY

SCHMATIC NOTES

1. Unless otherwise specified: Resistance values are in ohms, 1/4 watt, and 5% tolerance; capacitance values smaller than 1 are in microfarads (μ F); capacitance values greater than 1 are in picofarads (pF).
2. Printed circuit board components are outlined on the schematics by dotted lines. The circled numbers around the dotted lines correspond to the numbers on the PC Board layouts.
3. The heavy lines on the schematics denote the primary signal path.
4. The terminal numbering of rotary switches is for reference only.
5. All voltages indicated on the schematics are measured under the following conditions:
 - a. Use of an 11 megohm input impedance VTVM.
 - b. All voltages \pm 10% with respect to chassis ground.
 - c. No signal at input terminals.
 - d. AC input at 120 volts, 50/60 Hz.
6. In units with Serial No's below AM 1202 R55 thru R62 are 15K 5% 1/2W resistors, also R65, R67, R68, R69, and R70 are used. In the power supply section R102 is 560 Ω 1W 10% and R103 is 1.8K 1W 10%.

REPLACEMENT PARTS

All parts not listed are common items obtainable from radio parts jobbers.

Replacement parts may be obtained when ordered by PART NUMBER from:

McIntosh Laboratory, Inc.
Customer Service Department
2 Chambers Street
Binghamton, New York 13903
(telephone 607-723-3512)

				S1,2	L.F. Equalization	SWITCHES	146-150
				RESISTORS			
				R9,10	Film Res.	27K 5% 1/4W	141-082
				R11,12	Film Res.	2.2M 5% 1/4W	141-124
				R13,14	Film Res.	4.7K 5% 1/4W	141-064
	CAPACITORS			R15,16	Film Res.	2.2M 5% 1/4W	141-124
Symbol Number	Description	Part Number		R17,18	Film Res.	180K 5% 1/4W	141-102
C9,10	Elect. 1 μF	50V 066-269		R19,20	Film Res.	4.7K 5% 1/4W	141-064
C11,12	Mylar .047μF	100V 064-182		R21,22	Film Res.	360K 5% 1/4W	141-109
C13,14	Mylar .047μF	100V 064-182		R23,24	Film Res.	2.2M 5% 1/4W	141-124
C15,16	Elect. 1.5μF	50V 066-271		R25,26	Film Res.	2.2M 5% 1/4W	141-124
C23,24	Mylar .047μF	100V 064-182		R27,28	Film Res.	2.2M 5% 1/4W	141-124
C25,26	Mylar .1μF	100V 064-186		R29,30	Film Res.	270K 5% 1/4W	141-106
C27,28	Mylar .47μF	100V 064-194		R31,32	Film Res.	27K 5% 1/4W	141-082
C29,30	Mylar .068μF	100V 064-184		R33,34	Film Res.	5.6K 5% 1/4W	141-066
C39,40	Elect. 3.3μF	35V 066-238		R35,36	Film Res.	5.6K 5% 1/4W	141-066
C17,18	Elect. 47μF	16V 066-182		R37,38	Film Res.	560Ω 5% 1/4W	141-043
C35,36	Elect. 47μF	16V 066-182		R39,40	Film Res.	680Ω 5% 1/4W	141-045
C37,38	Elect. 47μF	16V 066-215		R41,42	Film Res.	680Ω 5% 1/4W	141-045
C51,52	Elect. 47μF	16V 066-215		R43,44	Film Res.	680Ω 5% 1/4W	141-045
C103,104	Elect. 150μF	63V 066-205		R45,46	Film Res.	680Ω 5% 1/4W	141-045
	DIODES			R47,48	Film Res.	220K 5% 1/4W	141-104
D1	Si Sig. Diode	070-047		R49,50	Film Res.	220K 5% 1/4W	141-104
D101	Bridge 400V 2A	070-044		R51,52	Film Res.	220K 5% 1/4W	141-104
D102,103	Zener Diode 16V	070-089		R53,54	Film Res.	220K 5% 1/4W	141-104
	RELAYS			R55,56	Film Res.	5.6K 5% 1/4W	141-066
K1	Reed Relay	087-024		R57,58	Film Res.	5.6K 5% 1/4W	141-066
	TRANSISTORS			R59,60	Film Res.	5.6K 5% 1/4W	141-066
Q1,2	Si NPN transistor	132-090		R61,62	Film Res.	5.6K 5% 1/4W	141-066
Q3,4	Si NPN transistor	132-090		R63,64	Film Res.	22K 5% 1/4W	141-080
Q5,6	Si NPN transistor	132-090		R71	Film Res.	180 5% 1/4W	141-031
Q7,8	Si NPN transistor	132-090		R72,73	Film Res.	100K 5% 1/4W	141-096
Q9	Si NPN transistor	132-090		R74	Film Res.	22K 5% 1/4W	141-080
	INTEGRATED CIRCUITS			MISCELLANEOUS ITEMS			
IC1,2	Integrated circuit	133-054		F101	Fuse 1/8A Normal Blo		089-035
IC3,4	Integrated circuit	133-054			Knob,Equal., L.F. (2)		090-076
	TRANSFORMERS				AC Power Cord		170-021
T101	Power transformer	159-134			Fuseholder		178-099
	POTENTIOMETERS				Shipping Carton		033-227
R1,2	100K	134-302			Capacitor Box Assy.		045-145
R3,4	100K	134-302			Audio Cable		170-015
R5,6	100K	134-302			Owners Manual		039-059
R7,8	100K	134-302					